CLAIM SET AS AMENDED

1. (Currently Amended) A robot for a production machine, comprising:

a rotation drive unit disposed on a support base;

a first arm, a proximal end portion of the first arm being fixed to a rotary shaft of the rotation drive unit;

a first proximal-side pulley disposed coaxially with the rotary shaft and fixed to the support base;

a second proximal-side pulley fixed to a distal end portion of the first arm;

an intermediate shaft rotatably supported on the distal end portion of the first arm, the intermediate shaft penetrating a center portion of the second proximal-side pulley;

a first distal-side pulley provided integrally with the intermediate shaft;

a first rotation transmission section for drivingly connecting the first distal-side pulley and the first proximal-side pulley;

a second arm, a proximal end portion of the second arm being fixed to the intermediate shaft;

a distal-side shaft rotatably supported on a distal end portion of the second arm;

a second distal-side pulley provided integrally with the distal-side shaft;

a second rotation transmission section for drivingly connecting the second distal-side pulley and the second proximal-side pulley; ~~and~~

a chuck fixed to the distal-side shaft, wherein the second arm rotates over an angle twice that over which the first arm rotates, and the chuck rotates over an angle one-half that over which the second arm rotates so that the chuck assumes a constant orientation and passes over the first proximal-side pulley when the rotation drive unit is operated, and tooth-number ratio between the first proximal-side pulley and the first distal-side pulley is set to n:1, and the tooth-number ratio between the second proximal-side pulley and the second distal-side pulley is set to 1:m, and

when the first arm and the second arm are extended to position the chuck at a center of the production machine, the second arm is substantially entirely overlapped between a movable mold and a stationary mold of the production machine.

2. (Original) A robot for a production machine according to claim 1, wherein the tooth-number ratio between the first proximal-side pulley and the first distal-side pulley is set to 2:1.

3. (Original) A robot for a production machine according to claim 1, wherein the tooth-number ratio between the second proximal-side pulley and the second distal-side pulley is set to 1:2.

4. (Original) A robot for a production machine according to claim 1, wherein the distance between the center of the second proximal-side pulley and the center of the second

distal-side pulley is set to be equal to the distance between the center of the first proximal-side pulley and the center of the first distal-side pulley.

5. (Original) A robot for a production machine according to claim 1, wherein the support base is disposed on a bed of an injection molding machine; and the chuck is moved through a space between the upper and lower tie bars.

6. (Original) A robot for a production machine according to claim 5, wherein the support base is supported by a movement mechanism for effecting movement in the front/back direction of the injection molding machine.

7. (Original) A robot for a production machine according to claim 1, wherein a rotation mechanism is disposed at the upper end of an injection molding machine, the rotation mechanism including a horizontal arm whose one end is supported to be rotatable about an axis extending in the vertical direction; the support base is attached to the other end of the horizontal arm; and the chuck is moved through a space between tie bars disposed at two different positions in the transverse direction of the injection molding machine.

8. (Canceled).

9. (Currently Amended) A robot for a production machine, comprising:

a rotation drive unit disposed on a support base;

a first arm, a proximal end portion of the first arm being fixed to a rotary shaft of the rotation drive unit;

a first proximal-side pulley disposed coaxially with the rotary shaft and fixed to the support base;

a second proximal-side pulley fixed to a distal end portion of the first arm;

an intermediate shaft rotatably supported on the distal end portion of the first arm, the intermediate shaft penetrating a center portion of the second proximal-side pulley;

a first distal-side pulley provided integrally with the intermediate shaft;

a first rotation transmission section for drivingly connecting the first distal-side pulley and the first proximal-side pulley;

a second arm, a proximal end portion of the second arm being fixed to the intermediate shaft;

a distal-side shaft rotatably supported on a distal end portion of the second arm;

a second distal-side pulley provided integrally with the distal-side shaft;

a second rotation transmission section for drivingly connecting the second distal-side pulley and the second proximal-side pulley; and

a chuck fixed to the distal-side shaft, wherein:

the second arm rotates over an angle twice that over which the first arm rotates, and the chuck rotates over an angle one-half that over which the second arm rotates so that the chuck assumes a constant orientation and passes over the first proximal-side pulley when the rotation drive unit is operated,

the tooth-number ratio between the first proximal-side pulley and the first distal-side pulley is set to n:1, the tooth-number ratio between the second proximal-side pulley and the second distal-side pulley is set to 1:m, and the distance between the center of the second proximal-side pulley and the center of the second distal-side pulley is set to be equal to the distance between the center of the first proximal-side pulley and the center of the first distal-side pulley~~; and~~,

the support base is disposed on a bed of an injection molding machine, and the chuck is moved through a space between the upper and lower tie bars, and

when the first arm and the second arm are extended to position the chuck at a center of the production machine, the second arm is substantially entirely overlapped between a movable mold and a stationary mold of the production machine.

10. (Previously Presented) A robot for a production machine according to claim **9**, wherein the tooth-number ratio between the first proximal-side pulley and the first distal-side pulley is set to 2:1.

11. (Previously Presented) A robot for a production machine according to claim **9**, wherein the tooth-number ratio between the second proximal-side pulley and the second distal-side pulley is set to 1:2.

12. (Previously Presented) A robot for a production machine according to claim **9**, wherein the support base is supported by a movement mechanism for effecting movement in the front/back direction of the injection molding machine.

13. (Currently Amended) A robot for a production machine, comprising:

a rotation drive unit disposed on a support base;

a first arm, a proximal end portion of the first arm being fixed to a rotary shaft of the rotation drive unit;

a first proximal-side pulley disposed coaxially with the rotary shaft and fixed to the support base;

a second proximal-side pulley fixed to a distal end portion of the first arm;

an intermediate shaft rotatably supported on the distal end portion of the first arm, the intermediate shaft penetrating a center portion of the second proximal-side pulley;

a first distal-side pulley provided integrally with the intermediate shaft;

a first rotation transmission section for drivingly connecting the first distal-side pulley and the first proximal-side pulley;

a second arm, a proximal end portion of the second arm being fixed to the intermediate shaft;

a distal-side shaft rotatably supported on a distal end portion of the second arm;

a second distal-side pulley provided integrally with the distal-side shaft;

a second rotation transmission section for drivingly connecting the second distal-side pulley and the second proximal-side pulley; and

a chuck fixed to the distal-side shaft, wherein:

the second arm rotates over an angle twice that over which the first arm rotates, and the chuck rotates over an angle one-half that over which the second arm rotates so that the chuck assumes a constant orientation and passes over the first proximal-side pulley when the rotation drive unit is operated,

the tooth-number ratio between the first proximal-side pulley and the first distal-side pulley is set to n:1, the tooth-number ratio between the second proximal-side pulley and the second distal-side pulley is set to 1:m;

a rotation mechanism is disposed at ~~the~~an upper end of an injection molding machine, the rotation mechanism including a horizontal arm whose one end is supported to be rotatable about an axis extending in the vertical direction and in a position above tie bars of the injection molding machine, the support base being attached to the other end of the horizontal arm, and the chuck being moved through a space between the tie bars disposed at two different positions in the transverse direction of the injection molding machine; and

the rotation mechanism is supported by a movement mechanism for effecting movement in the front/back direction of the injection molding machine.

14. (Previously Presented) A robot for a production machine according to claim **7**, wherein the chuck faces a molded product in an approach position, wherein the first arm and the second arm extend along a vertical direction.

15. (Previously Presented) A robot for a production machine according to claim **14**, wherein when the chuck has reached an elevated position, the rotation mechanism rotates the horizontal arm to move the product removal apparatus to a retreated position, and the rotation drive unit rotates the first arm so that the chuck moves downward along the vertical direction.